AVENTIS BEHRING GMBH 2003/M007 (A73)

Patent claims:

1. A transfer device (1), in particular for a container (2) whose interior is under negative pressure, with a receiving cap (9) for receiving a bead (4) of the container (2) closed by means of an elastic stopper (5), the receiving cap (9) having an edge portion (13) for centering the bead (4) in its position of insertion in the receiving cap (9), and a lid portion (15), and with a central piercing mandril (10) which is connected to the lid portion (15) and projects into the space (19) enclosed by the receiving cap (9), the piercing mandril (10) piercing the stopper (5) when the bead (4) is inserted into the receiving cap (9), and the piercing mandril (10) having a flow channel (17) extending through it for a fluid which is conveyed outward through the lid portion (15), wherein, relative to its direction of piercing, the piercing mandril (10) has a front piercing portion (20) and a rear sealing portion (21) which is of greater diameter, and, in the position in which the bead (4) is inserted into the receiving cap (9), the sealing portion (21) contacts the stopper (5).

2. The device as claimed in claim 1, wherein said device is of a rotationally symmetrical design.

3. The device as claimed in claim 1 or 2, wherein the transition from the piercing portion (20) to the sealing portion (21) of the piercing mandril (10) is stepped, the end face (24) of the sealing portion (21) of the piercing mandril (10) making annular contact with the stopper (5).

4. The device as claimed in one of claims 1 through 3, wherein the length of the sealing portion (21) is dimensioned such that the sealing portion (21) penetrates into the stopper (5) when the bead (4) is in its position of insertion in the receiving cap (9).

5. The device as claimed in one of claims 1 through 4, wherein the edge portion (13) of the receiving cap (9) has an inward projection (16) for engaging behind the bead (4) when the bead (4) is in its position of insertion in the receiving cap (9).

6. The device as claimed in claim 5, wherein the axial distance (A) between inward projection (16) and sealing portion (21) is smaller than the axial distance (B) between inward projection (16) and that surface of the stopper (5) facing the lid portion (15) when the bead (4) is in its position of insertion in the receiving cap (9).

7. The device as claimed in one of claims 3 through 6, wherein a sealing element (25) is integrated in the end face (24) of the sealing portion (21).

8. The device as claimed in claim 7, wherein the sealing element (25) is designed as an O-ring.

9. The device as claimed in one of claims 1 through 8, wherein the piercing portion (20) widens conically toward the sealing portion (21).

10. The device as claimed in one of claims 1 through 9, wherein the sealing portion (21) is a conical widening which adjoins the piercing portion (20).

11. The device as claimed in claim 10, wherein the sealing portion (21) adjoins the piercing portion (20) in a stepless configuration.